GENETICS LABORATORY

DEPARTMENT OF BIOCHEMISTRY

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2nd May, 1972.

Professor Joshua Lederberg,
Department of Genetics,
Stanford University Medical Center,
Stanford,
California 94305,
U.S.A

Dear Josh,

I should like to accept your invitation to attend the meeting which you are organising at the Weizmann Institute from July 1st to July 4th. I think I mentioned to you that I had thought I might be going to a Meeting in Hawaii at that time, but for a variety of reasons it turns out to be difficult and inappropriate for us to go to that. I assume there would be no difficulty in providing accommodation for Julia at the Weizmann if she comes with me. I will, in fact, be very interested in such a discussion as apart from my general interest in this area it relates specifically to the work we are doing on the British Association working party on some of the social issues connected with advances in genetics and biology, of which I am Chairman.

I shall look forward to hearing from you in due course concerning the further details of the meeting.

I was very interested to get your various comments on the history of ideas in cell fusion and its use for somatic cell genetics and also on the mitochondrial work by Lettre. We are, in fact, going to try and do experiments along these lines. There is one possibly promising selective technique which may be useful in this respect. It appears that 5BUdR may be preferentially incorporated into mitochondrial DNA in the 5BUdR resistant cell lines. When treated with light in the appropriate way the mitochondria of these cell lines may therefore be inactivated so providing a simple selective mechanism for insertion of normal mitochondria. Incidentally on a minor point on the work that we did on the mitochondrial DNA, it was really David Clayton that did all the density gradients and analyses of the mitochondrial DNA in the hybrids, not Teplitz. On the point you ask about techniques for looking at the protein constituents of the mitochondria, I think it is now fairly clear that we should be able to distinguish at least some of the mitochondrial associated enzymes if we use an interspecies mixture. Thus at least with respect to detecting the presence of whole mitochondria from one or the other species, this should not be a difficult problem. More difficult is the question of trying to detect those protein components of the mitochondria which may be coded for by the mitochondrial DNA. Once again here we are hoping that immunological techniques coupled with the use of

appropriate metabolic inhibitors may help us to identify differences with respect to those proteins which are specified by the mitochondrial DNA.

With best wishes.

Yours sincerely,

Walter Bodmer.